```python
# %%
#importing python library
import numpy as np
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
from sklearn.model_selection import train_test_split
from sklearn.ensemble import RandomForestClassifier
from sklearn.metrics import accuracy_score

# %%
#loading the dataset
data = pd.read_csv('DATA.csv')

# %%
#printing top 5 rows of the dataset
data.head()


# %%
#printing last 5 rows
data.tail()

# %%
data.describe()

# %%
data.shape

# %%
#findinf is there any null value in the dataset
data.isnull().sum()

# %%
data.info()

# %%
#Dropping the unwanted columns as they are not going to contribute in the
output
X = data.drop(columns=['Name','Gender','Location', 'CustomerID',
'Churn'], axis=1)
print(X)


# %%
#storing the churn factor separetely as its our final output
Y = data['Churn']
print(Y)

# %%
#Correlation
#establishing correlation btw all factors
correlation = X.corr()

# %%
plt.figure(figsize=(5,5))
sns.heatmap(correlation, cbar= True, square= True, fmt = '.1f',
annot_kws= {'size' : 8}, cmap = 'Oranges' )
```

```python
# %%
#splitting the dataset training and testing sets
X_train, X_test, Y_train, Y_test = train_test_split(X, Y, test_size=0.2,
random_state=3)

# %%
print(Y.shape, Y_train.shape, Y_test.shape)

# %%
#loadind the model for trainning the datadet
model = RandomForestClassifier()

# %%

model.fit(X_train, Y_train)

# %%
#finding the accuracy of the test model
X_test_prediction = model.predict(X_test)
test_data_accuracy = accuracy_score(X_test_prediction, Y_test)

# %%
print('Acuuracy : ', test_data_accuracy)

# %% [markdown]
#                                 Predictive System

# %%


input_data = (53,12,64.49,383)

input_array = np.asarray(input_data)

input_reshaped = input_array.reshape(1, -1)

prediction = model.predict(input_reshaped)
print(prediction)

if (prediction[0]==1):
  print('Satisfied')
else:
  print('Unsatisfied')
```